

SEP 06 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

David S. DeLORENZO, et al.

Serial No.: 10/606,514

Group Art Unit: 2125

Filed: June 25, 2003

Examiner: S. Shechtman

FOR: METHOD AND APPARATUS FOR MEMORY BANDWIDTH
THERMAL BUDGETTING

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. § 41.41, Applicant submits this reply brief, in response to the Examiner's Answer mailed July 5, 2005.

All arguments in Applicants' Appeal Brief, filed May 9, 2005, are herein incorporated into this Reply Brief.

In numbered paragraph 7, the Examiner erroneously refers to Grouping of Claims. Applicants note that the grouping of claims was eliminated in the final rule change made effective September 13, 2004. The cited rule 37 C.F.R. 1.192 has been removed and replaced with Section 41.37. There is no longer any requirement to group claims. The claims have been argued separately and do not stand or fall together as asserted by the Examiner.

In numbered paragraph 11, on page 5 at lines 12-13, the Examiner asserts that "It is applicant's duty to review the entire reference. Applicant states that the reference is

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not understood. For applicant's convenience further explanation is provided below." Applicants are well aware of their duties and take issue with the Examiner's gross mischaracterization. Applicants have thoroughly reviewed the entire reference and have NEVER stated that 'the reference is not understood.' Rather, applicants have expressed frustration that the Examiner has not fulfilled his duties in setting forth a full and fair analysis of the reference and have stated that the rejection is not understood because the Examiner fails to explain his position.

In numbered paragraph 11, the Examiner purports to respond to applicants' arguments, but does so only selectively. The Examiner has the duty to answer all traversals and should respond to the substance of all of applicants' arguments. The Board should consider that the Examiner has conceded all of applicants' arguments which have not been addressed or rebutted by the Examiner.

Claims 1, 13, and 25

On page 3 of the appeal brief, last full paragraph, applicants argue that Nizar does describe any actual calculation of a temperature estimate. The Examiner has not rebutted and apparently concedes this argument.

On page 4 of the appeal brief, first full paragraph, applicants argue that Nizar teaches only calculating an accumulated power dissipated, not a calculated temperature estimate. The Examiner has not rebutted and apparently concedes this argument.

On page 4 of the appeal brief, second full paragraph, applicants argue that the sum of the power dissipation does not identically correspond to the predicted package / die temperature. The Examiner has not rebutted and apparently concedes this argument.

In the Examiner's response to arguments, in the paragraph spanning page 5 and page 6, the Examiner states that "the features upon which applicant relies (i.e., using the predicted temperature to control access to the device) are not recited in the rejected

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claim(s)." Applicants again take issue with the Examiner's gross mischaracterization of applicants Appeal Brief. Applicants have not and do not rely on features not recited in the claims to distinguish over Nizar.

Claim 1 recites, among other things, "the controller is adapted ... to control access to the device in accordance with the calculated temperature estimate." Claim 13 recites, among other things, "controlling access to the device in accordance with the calculated temperature estimate." Claim 25 recites, among other things, "the controller is adapted ... to control access to the device in accordance with the calculated temperature estimate." These are some of the recitations of that the claims that Applicants argued distinguish the claims over the cited reference.

The various references in the appeal brief to 'using' the 'predicted temperature' are made in connection with what is or is not described in the Nizar reference. Applicants have argued that "Nizar further fails to identically describe controlling access to the device using the 'predicted temperature.' " This is a completely appropriate argument about a deficiency in the reference and not, as asserted by the Examiner, an improper reliance on features not recited in the claims.

The substance of the Examiner's response, in the first full paragraph on page 6 of the Answer, is a circular argument. The Examiner argues essentially that because the throttle counter limit is set to keep the package temperature within its limits, that access is controlled in accordance with the calculated temperature estimate. The question remains, what 'calculated temperature estimate'? It is clear that the package temperature limit in Nizar is based on some predetermined maximum temperature, not a calculated temperature estimate made by the controller itself. The throttle counter limit is then set to some integer number, presumably based on empirical testing or other predetermined factors as to how much traffic will likely keep the package within its temperature limits. Access to the device in Nizar is then controlled in accordance with the counters, not any temperature estimate calculated by the controller. In any event, the Examiner appears to concede that the access is controlled based on the throttle counter limit, and not the

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'predicted temperature' relied upon by the Examiner for allegedly reading on the recited temperature estimate.

Claims 2, 14, and 26

On page 6 of the Answer, second full paragraph, the Examiner states that "Applicant argues that Nizar et al. does not teach receiving an access request." Applicants take issue with the Examiner mischaracterization of applicants' arguments. Applicants argued only that the cited portion of col. 1, lines 29-32 of Nizar does not describe receiving an access request, which it does not. Applicants note that the Examiner has corrected his statement of the rejection to now include the cover figure.

On page 6 of the Answer, third full paragraph, the Examiner states that "Applicant argues that Nizar et al. fails to mention the words 'access request'." Applicants take issue with the Examiner's mischaracterization of applicants' arguments. Applicants argued only that the cited portions of col. 2, lines 1-14 of Nizar and col. 12, lines 3-28 of Nizar do not even mention the words 'access request', which they do not. Applicants further argued that these cited portions both further fail to describe any calculation of a temperature estimate. The Examiner has not rebutted and apparently concedes these arguments.

In the Examiner's answer, in the paragraph spanning pages 6 and 7, the Examiner argues that applicants are improperly relying on features which are not recited in the claims. The single identified feature (comparing a temperature estimate to a temperature threshold), is argued as a feature not present in the cited reference. This is a completely appropriate argument about a deficiency in the reference and not, as asserted by the Examiner, an improper reliance on features not recited in the claims.

In the only substantive response to applicants' arguments, on page 7 of the answer, first full paragraph, the Examiner states that "The claims, as such, do not require imposing an access budget if the temperature estimate does not exceed the threshold."

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The Examiner then provides some analysis, concluding that "the throttle logic monitoring the temperature of the device and determining that the device is approaching its thermal specification is determining that the temperature estimate has not exceeded a temperature threshold." (Emphasis added). Applicants have not verified the accuracy of the Examiner's statement because even if true, it does not read on the claims, which recite among other things, determining if the temperature estimate exceeds a temperature threshold.

In any event, the Examiner does not rebut and apparently concedes the substance of applicants' arguments. Namely, the Examiner does not rebut and apparently concedes that nothing in the cited portions relied upon by the Examiner describe the conditions under which the access budget is imposed. The Examiner does not rebut and apparently concedes that the only mention of an access budget in the cite portions is in connection with a "ratio of access budget to throttling windows," which has nothing to do with temperature, estimated or otherwise. The Examiner does not rebut and apparently concedes that the only description of device temperature in the cited portions is related to an actual monitored temperature, not a calculated temperature estimate.

Claims 3, 15, and 27

The Examiner's lumps claims 3, 5, and 27 together in his response to applicants' arguments for claims 2, 14, and 26. However, the Examiner does not address the substance of any of applicants' arguments. Accordingly, the Examiner does not rebut and apparently concedes all of applicants' arguments in connection with claims 3, 15, and 27.

In particular, the Examiner does not rebut and apparently concedes that the cited portions do not describe or even mention the access request budget or any conditions under which such budget is not imposed. The Examiner does not rebut and apparently concedes that both cited portions describe 'throttling' activity which would indicate that the accesses are being controlled against some budget (even if being 'throttled' up). The

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Examiner does not rebut and apparently concedes that the cited portions further do not describe or even mention any temperature estimate.

Claims 4, 16, and 28

The Examiner's lumps claims 4, 16, and 28 together in his response to applicants' arguments for claims 2, 14, and 26. However, the Examiner does not address the substance of any of applicants' arguments. Accordingly, the Examiner does not rebut and apparently concedes all of applicants' arguments in connection with claims 4, 16, and 28.

In particular, the Examiner does not rebut and apparently concedes that the cited portions do not describe or even mention the access request budget or any conditions under which such budget is imposed. The Examiner does not rebut and apparently concedes that the cited portions further do not describe or even mention any temperature estimate.

Claims 5, 17, and 29

The Examiner's lumps claims 5, 17, and 29 together in his response to applicants' arguments for claims 2, 14, and 26. However, the Examiner does not address the substance of any of applicants' arguments. Accordingly, the Examiner does not rebut and apparently concedes all of applicants' arguments in connection with claims 5, 17, and 29.

In particular, the Examiner does not rebut and apparently concedes that the described 'throttling window' is different from the recited 'access request budget'. The Examiner does not rebut and apparently concedes that the cited portion describes that the budget if read maximum QW is 'allocated,' which is different from the recited 'calculated.' The Examiner does not rebut and apparently concedes that the cited portion

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does not describe that such allocations are done each time an access budget is imposed, just once for each throttling window.

Claims 6, 18, and 30

Claims 6, 18, and 30 each recite features relating to calculating a new access request budget periodically. The Examiner's answer appears to concede that the rejection of record is deficient and supplements that rejection with citation to further portions of Nizar. However, the Examiner's further citations and analysis still fail to establish anticipation of the claims.

The relied upon portions for 'periodically' (i.e. col. 11, lines 60-61, col. 3, lines 16-25, and the newly cited col. 7, lines 60-67), have nothing to do with calculating a new access request budget. The newly cited portions (namely, col. 8, lines 28-40) which purportedly read on the recited calculating a new access request budget, do not relate to the 'periods' described in the other relied upon portions.

Nizar describes that for each throttle window a budget of write maximum QW is 'allocated'. Allocating a budget for each write window is different from periodically calculating a new access request budget.

The newly cited portion of col. 8, lines 35-40, which describes how the write maximum QW is selected, does not describe periodically calculating a new write maximum QW.

Claims 7, 19, and 31

Claims 7, 19, and 31 each recite features relating to the new access request budget being calculated when a parameter involved in the calculation is updated. The Examiner's answer appears to concede that the rejection of record is deficient and

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supplements that rejection with citation to further portions of Nizar. However, the Examiner's further citations and analysis still fail to establish anticipation of the claims.

The newly cited portion of col. 8, lines 35-40, which describes how the write maximum QW is selected, does not describe periodically calculating a new write maximum QW. The cited portion does not further describe that any parameter might be updated or that the write maximum QW would be re-calculated when a parameter is updated. The cited portion merely gives one example of how the pre-determined value for write maximum QW could be selected.

In view of the foregoing, together with Applicants' Appeal Brief, favorable reconsideration and reversal of the rejection is respectfully requested. Early notification of the same is earnestly solicited. If there are any questions regarding the present application, the Examiner and / or the Board is invited to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

September 6, 2005

Date

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